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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
DAYE, CHELCIE L	
ART UNIT	**PAPER NUMBER**
2161	

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/646,472	WAKEAM ET AL.	
	Examiner	Art Unit	
	Chelcie Daye	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *1-6 and 15-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2004 and 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is issued in response to Applicants election on February 9, 2006.

2. Claims 7-14 are pending. Claims 1-6 and 15-18 are withdrawn.

3. Claims 1-6 and 15-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse on February 9, 2006.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-6, drawn to a method for ordering documents, classified in class 707, subclass 1.

II. Claims 7-14, drawn to a method of providing conversion data, classified in class 707, subclass 5.

III. Claims 15-18, drawn to a data structure for storing and ordering data, classified in class 707, subclass 100.

Inventions I, II, III, are related as combination and subcombinations.

Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particular subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)).

In the instant case, the combination (I) as claimed does not require the subcombinations II or III, as claimed because it is a method for ordering documents which does not need to be related to the claimed method for providing conversion data or the data structure for storing and ordering data. The subcombination II, as claimed does not require the combination I, or subcombination III, as claimed because the method of providing conversion data does not need the method for ordering documents nor the data structure for storing and ordering data. The subcombination III, as claimed does not require the combination I, or subcombination II, as claimed because the data structure for storing and ordering data does not need the method for ordering documents nor the method of providing conversion data. Therefore, the inventions are distinct; however, they could be usable together.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for I is not required for II, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

A telephone call was made to Gary Fedorochko at (202) 824.3000 on

February 9, 2006 requesting an oral election to the above restriction requirement, applicant elects Group II without traverse.

Information Disclosure Statement

4. The information disclosure statements (IDS) submitted on 1/20/04, 1/22/04, 3/17/04, 5/13/04, and 6/25/04 were filed after the mailing date of the application on August 21, 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "leaf node below a pinned node" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the specification: Fig.2, item 205. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

8. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "if" in claim 7 is a relative term, which renders the claim indefinite. The term "if" is considered alternative language, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Due to the language of the above stated claim, examiner is unclear as to what the outcome would result in, when the "if" statement was not achieved. Therefore, the above stated claim will be examined without giving any weight to the term "if".

9. Claims 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claims 10-12, examiner is unclear how the collision criteria is "prohibiting ink strokes from being added/removed to/from leaf nodes below a pinned node", when the collision criteria is also "prohibiting adding/removing of leaf nodes below a pinned node". In order to further prosecution, examiner will give the claims the broadest reasonable interpretation, as stated below in the action below.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 7-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a test of whether the invention is categorized as a process, machine, manufacture or composition of matter and if the invention produces a useful, concrete and tangible result. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) are found to be non-statutory subject matter. For a method claim to pass muster, the recited process must produce a useful, concrete and tangible result.

In the present case, claims 7-14 recite reconciling a first data structure with a second data structure. The data structures can be broadly interpreted as a record of data, such as a piece of paper. Accordingly, the claims are merely software per se and are non-statutory. Also, the method fails to produce a tangible and useful result, from the reconciliation of the data structures.

To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 7-9,13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holenstein (US Patent Application No. 20020133507) filed on March 29, 2002 in view of Neeman (US Patent No. 5,588,147) filed on January 14, 1994.

Regarding Claim 7, Holenstein discloses a method of reconciling a first data structure with a second data structure, comprising:

determining which node of the second data structure includes a change from a corresponding node in the first data structure (Fig.1; [0025], lines 1-6, and [0036], lines 1-2, Holenstein)[1]; and

for each node in the second data structure including a change, attempting to access the corresponding node in the first data structure (Fig.1; [0027], lines 1-4, and [0036], lines 1-2, Holenstein)[2]. Holenstein's replication system does

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[1] Examiner Notes: Fig.1 shows data structures 14 and 26, wherein the data structures have nodes 12 and 24. The collector "reads" (i.e. determines) the changes between the corresponding nodes. Also, the collector is able to reverse the direction of first data structure to second data structure, to the direction of second data structure to first data structure by the "reverse replication".

[2] Examiner Notes: The consumer "applies" (i.e. accesses) the changes passed from the collector, which comes from the secondary data structure and passed to the first data structure. Again, this is possible by using the "reverse replication" as stated above.

recognize that while performing dual writes and having to reconcile data structures collisions will occur. However, Holenstein is silent with respect to if the corresponding node in the first data structure can be accessed, determining, if the change to the second data structure creates a mandatory collision or a discretionary collision, if the change to the second data structure creates a discretionary collision, determining if the discretionary collision is forbidden by collision criteria, and if the discretionary collision is not forbidden by the collision criteria, making the change to the corresponding node in the first data structure. On the other hand, Neeman discloses if the corresponding node in the first data structure can be accessed, determining, if the change to the second data structure creates a mandatory collision or a discretionary collision[3] (column 8, lines 31-36, Neeman), if the change to the second data structure creates a discretionary collision, determining if the discretionary collision is forbidden by collision criteria (column 8, lines 21-31, Neeman)[4], and if the discretionary collision is not forbidden by the collision criteria, making the change to the corresponding node in the first data structure (column 8, lines 37-47, Neeman). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Neeman's teachings into the Holenstein system. A skilled artisan would have been motivated to combine as suggested by Neeman

[3] Examiner Notes: The namespace collision happens when an object is renamed to have the same name as another object, making the collision "discretionary" as to whether or not to permit the change. Therefore, the "namespace collision" corresponds to discretionary collision.
[4] Examiner Notes: The criteria for the collision are represented by the rules and the association of the changes with the names, determine if the change is resolved or not (i.e. if not then the collision is forbidden).

at columns 5 and 6, lines 66-67 and 1-6, in order to provide load balancing by having more than one copy of an object stored across the system and availability by allowing multiple copies of important objects to be distributed across the system. As a result, by recognizing the possible collisions, it increases the fault resilience of the system.

Regarding Claim 8, the combination of Holenstein in view of Neeman, discloses the method further comprising deleting empty nodes from the first data structure ([0157], lines 13-19, Holenstein)[5].

Regarding Claim 9, the combination of Holenstein in view of Neeman, discloses the method further comprising identifying nodes in the first data structure for with a change to the second data structure (Fig.1; [0025], lines 1-6, and [0036], lines 1-2, Holenstein) creates a collision to a software application maintaining the first data structure ([0134], lines 1-5, Holenstein).

Regarding Claim 13, the combination of Holenstein in view of Neeman, disclose the method further comprising determining whether a collision is mandatory based upon interface rules for the first data structure ([0223], lines 1-14 and [0224], lines 1-5, Holenstein)[6].

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[5] Examiner Notes: When the tokens are not returned to the nodes, they are considered empty and as a result the nodes are removed.

[6] Examiner Notes: The collision is mandatory because the absolute and relative change of information occurs, but is later resolved.

Regarding Claim 14, the combination of Holenstein in view of Neeman, disclose the method further comprising:

employing a log of changes to the second data structure to determine (column 5, lines 27-30, Neeman), for each accessed node in the first data structure, if a change has been made to a corresponding node in the second data structure (column 8, lines 40-469, Neeman).

13. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holenstein (US Patent Application No. 20020133507) filed on March 29, 2002 in view of Neeman (US Patent No. 5,588,147) filed on January 14, 1994, as applied to claims 7-9,13 and 14 above, and further in view of "Robust Annotation Positioning in Digital Documents", by Gupta, Brush, Bargeron, and Cadiz, Published on September 22, 2000, referred to as "Gupta" hereinafter.

Regarding Claim 10, the combination of Holenstein in view of Neeman, disclose all of the claimed subject matter. However, Holenstein in view of Neeman do not explicitly disclose the method wherein the collision criteria:

prohibits ink strokes from being added to a leaf node below a pinned node,

prohibits ink strokes from being removed from a leaf node below the pinned node,

prohibits adding leaf nodes below the pinned node,

prohibits removing leaf nodes below the pinned node, and

prohibits re-parenting of leaf nodes below the pinned node. On the other hand, Gupta discloses prohibits ink strokes from being added (pg.7, [5.3.1], lines 5-8, Gupta)[7] to a leaf node below a pinned node (pg.4, [3.2], line 12, Gupta)[8], prohibits ink strokes from being removed (pg.7, [5.3.1], lines 5-8, Gupta) from a leaf node below the pinned node (pg.4, [3.2], line 12, Gupta), prohibits adding (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta), prohibits removing (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta), and prohibits re-parenting (pg.6, [5.1.1], lines 11-14, Gupta)[9] of leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Neeman's collision information into Holenstein's replication system. A skilled artisan would have been motivated combine as suggested by Gupta at page 2, column 2 lines 13-17, in order to limit

[7] Examiner Notes: "Same" means when the text does not move or change; this corresponds to no modifications such as adding or removing of other nodes. Also, ink strokes can be represented as nodes and nodes can be represented as ink strokes.
[8] Examiner Notes: Anchor text is the text, which identifies the nodes position (pg.4, [3.2.1], lines 1-2, Gupta). The anchor text corresponds with pinned node, because the anchored text is unchangeable.
[9] Examiner Notes: Prohibiting re-parenting corresponds to "orphaned", because if an annotation (i.e. node) is unable to find a location it is left without a parent (i.e. orphaned), which means it does not get a new parent node.

where a stroke can be placed or either drop stokes when documents are changed, which ultimately enhances the performance of the system.

Regarding Claims 11 and 12, the combination of Holenstein in view of Neeman, and further in view of Gupta, disclose the method wherein the collision criteria:

allows late ink strokes to be added to a leaf node below a pinned node under specified conditions (pg.7, [5.3.3], lines 1-3 and 9-14, Gupta)[10],

prohibits ink strokes from being removed (pg.7, [5.3.1], lines 5-8, Gupta) from a leaf node below the pinned node (pg.4, [3.2], line 12, Gupta),

prohibits adding (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta),

prohibits removing (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta), and

prohibits re-parenting (pg.6, [5.1.1], lines 11-14, Gupta) of leaf nodes below the pinned node(pg.4, [3.2], line 12, Gupta).

[10] Examiner Notes: The changing of nodes in the updated document is considered "late" because the modification was not done in the original.

Points of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chelcie Daye whose telephone number is 571-272-3891. The examiner can normally be reached on M-F, 7:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 571-272-4023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chelcie Daye
Patent Examiner
Technology Center 2100
March 6, 2006

Sana Al-Hashmi